Notice of Allowability	Application No.	Applicant(s)	
	10/677,723	SHIMOTONO ET AL.	
	Examiner	Art Unit	
	Dismery E. Mercedes	2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *amend. filed 11/03/2005*.

2. ☒ The allowed claim(s) is/are *1-13,15,16 and 20-28*.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☒ All b) ☐ Some* c) ☐ None of the:
      1. ☒ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Reasons for Allowance

1. Claims 1-13, 15-16, 20-28 are allowed.

2. The following is an examiner's statement of reasons for allowance:

Independent Claims 1,4,7,28 are allowable over the Prior Art of Record, since the cited references, taken alone or in combination do not teach or suggest *a shock prediction mechanism for analyzing the current information acquired by said information acquisition mechanism together with a history thereof, and for determining a status of where said magnetic disk device is used, so as to perform a shock prediction and a control mechanism for controlling operations of said magnetic disk device including a magnetic head escape operation based on a prediction result by said shock prediction mechanism.*

Independent Claim 2 is allowable over the Prior Art of Record, since the cited references, taken alone or in combination do not teach or suggest *a shock prediction mechanism for analyzing the current information acquired by said information acquisition mechanism together with a history thereof, and for determining a status of where said magnetic disk device is used, so as to perform a shock prediction and a control mechanism for controlling operations of said magnetic disk device including a magnetic head escape operation based on a prediction result by said shock prediction mechanism, wherein the history analyzed is longer than an anticipated time required to fall, wherein if a variation in the status where said magnetic disk device is used falls within a specified range for a specified period, said shock prediction mechanism does not predict that a shock will be caused by the variation in the status.*

Independent Claim 3 is allowable over the Prior Art of Record, since the cited references, taken alone or in combination do not teach or suggest *a shock prediction mechanism for analyzing the current information acquired by said information acquisition mechanism together with a history thereof, and for determining a status of where said magnetic disk device is used, so as to perform a shock prediction and a control*

mechanism for controlling operations of said magnetic disk device including a magnetic head escape operation based on a prediction result by said shock prediction mechanism, wherein if the status of where said magnetic disk device is used varies in a predetermined pattern, said shock prediction mechanism predicts that a shock will be caused by the variation in the status..

Independent Claim 5 is allowable over the Prior Art of Record, since the cited references, taken alone or in combination do not teach or suggest *a shock prediction mechanism for analyzing the current information acquired by said information acquisition mechanism together with a history thereof, and for determining a status of where said magnetic disk device is used, so as to perform a shock prediction and a control mechanism for controlling operations of said magnetic disk device including a magnetic head escape operation based on a prediction result by said shock prediction mechanism, and said shock prediction mechanism recognizes the status where the magnetic disk device is used based on the acceleration information acquired by said information acquiring mechanism.*

Independent Claim 6 is allowable over the Prior Art of Record, since the cited references, taken alone or in combination do not teach or suggest *a shock prediction mechanism for analyzing the current information acquired by said information acquisition mechanism together with a history thereof, and for determining a status of where said magnetic disk device is used, so as to perform a shock prediction and a control mechanism for controlling operations of said magnetic disk device including a magnetic head escape operation based on a prediction result by said shock prediction mechanism, wherein if said shock prediction mechanism determines that said magnetic disk device is stable, the shock prediction mechanism notifies said control mechanism that said magnetic disk device is stable, and said control mechanism returns said escaping magnetic head in response to said notification wherein said shock prediction mechanism adaptively determines whether or not said magnetic disk device is stable, based on a history of the information acquired by said information acquiring mechanism before a shock is predicted to occur.*

Independent Claim 8 is allowable over the Prior Art of Record, since the cited references, taken alone or in combination do not teach or suggest *a shock prediction mechanism for analyzing the current information acquired by said information acquisition mechanism together with a history thereof, and for determining a status of where said magnetic disk device is used, so as to perform a shock prediction and a control mechanism for controlling operations of said magnetic disk device including a magnetic head escape operation based on a prediction result by said shock prediction mechanism, wherein if said magnetic head has escaped, said control mechanism holds a new access request to the magnetic disk device in an internal queue instead of realizing the access request until said shock prediction mechanism determines that said magnetic disk device is stable.*

Independent Claim 9 is allowable over the Prior Art of Record, since the cited references, taken alone or in combination do not teach or suggest *a status determination mechanism for determining a status of where said magnetic disk device is used; and a control mechanism for controlling operations of said magnetic disk device including a magnetic head escape operation based on a determination result by said status determination mechanism, wherein, when said status determination mechanism determines that there is a high probability of excessive shock to said magnetic disk device, said control mechanism divides an access request to said magnetic disk device into access requests with a small data size per access and transmits the access request to said magnetic disk device.*

Independent Claim 13 is allowable over the Prior Art of Record, since the cited references, taken alone or in combination do not teach or suggest *a diagnosis mechanism for operating if a shock actually occurs after said control mechanism has started causing a magnetic head to escape, to determine whether or not the magnetic head has escaped before the occurrence of the shock, wherein said diagnosis mechanism makes said determination by comparing a pre-shock period, that is a time from a start of an escape operation of the magnetic head until the occurrence of a shock, with an already measured and restored escape time required for the escape operation of the magnetic head.*

Independent Claim 20, 23 are allowable over the Prior Art of Record, since the cited references, taken alone or in combination do not teach or suggest *a driver for dividing an access request to said magnetic disk device into access requests with a small data size per access and for transmitting to said magnetic disk device when said shock manager finds a high possibility of excessive shock to said magnetic disk device.*

Independent Claim 22 is allowable over the Prior Art of Record, since the cited references, taken alone or in combination do not teach or suggest *accumulating acceleration information acquired by said sensor for a specified period of time, analyzing the acceleration information and a history thereof to recognize a change pattern of said magnetic disk device, and based on a content of said change of said magnetic disk device status, predicting a probability of shock to said magnetic disk device and executing a magnetic head escape operation when a shock to said magnetic disk device is predicted.*

Claim 26 is allowable over Prior Art of Record, since the cited references taken alone or in combination do not teach or suggest *a shock actually occurs after a magnetic head has started escaping determining whether or not the magnetic head escape has been completed before the occurrence of the shock, by comparing a pre-shock period, that is a time from a start of an escape operation of the magnetic head until the occurrence of a shock, with an already measured and restored escape time required for the escape operation of the magnetic head.*

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Kikuta et al. (US 2002/0027733 A1); Ishiyama et al. (US 2003/0067705 A1); Kisaka et al. (2004/0190187 A1), Ito et al. (2004/0240098 A1), Lee et al. (5,521,772), Carlson et al. (US 6,018,431), Serrano et al. (US 6,429,990 B2);Uchiike et al. (US 6,236,527); Codilian et al. (US 6,735,033) ; Codilian (US 6,714,371) ;Kasiraj et al. (US 5,777,815).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dismery E. Mercedes whose telephone number is 571-272-7558. The examiner can normally be reached on Monday - Friday, from 9:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dismery E Mercedes
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Art Unit 2651

DM

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